

# NOTES ON THE ARCHEOLOGY OF ST. SOPHIA AT CONSTANTINOPLE: THE GREEN MARBLE BANDS ON THE FLOOR

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## THE MARBLE RIVERS

The floor of the Great Church of St. Sophia in Constantinople is like a sea. This is certainly the meaning of the metaphor which Paulus Silentiarius tries to convey in the turgid archaisms of his Ἐκφρασις on the ambo of St. Sophia, where he describes the great pulpit as "a beautiful island amidst the swelling billows . . . [which yet] does not stand in the middle space completely cut off, like an island girdled by the sea; it is rather like some wave-washed land, projected forward by an isthmus into the middle of the sea through the grey billows . . . it projects into the ocean . . . wave-washed on either side . . ." <sup>1</sup> In other literary works, the floor of the nave of St. Sophia is described as the earth depicted in marble with "green [marble] in the likeness of rivers flowing into the sea." <sup>2</sup> There are four green rivers representing the rivers which flowed from paradise. <sup>3</sup> In less sophisticated works of Byzantine literature the two metaphors occasionally become confused, and we are told that the floor is

"like a sea, . . . [like] ever flowing waters of a river; for he [Emperor Justinian] called the four borders [φίνες = Latin *finēs*] of the church the four rivers which went out of paradise." <sup>4</sup>

The existence of bands of green marble "rivers" dividing the nave of St. Sophia in Constantinople is beyond question. They are the transverse bands of green Thessalian marble, varying in width between 0.50 and 0.70 m., plotted in Van Nice's folio of architectural plans of the church. <sup>5</sup> These bands seem to be common to the Byzantine floor of the nave in the Justinianic church and in the large-scale repaving after the first collapse of the dome in 558, as well as in the paving repairs necessitated by the fall of the western and eastern arches in the tenth and fourteenth centuries respectively.

The first river, counting from the west, is approximately 16.75 m. from the threshold of the doors leading into the nave (fig. A). Its western edge falls approximately 2.10 m. west of the flat nave side of the western

<sup>1</sup> "Descriptio Ambonis," in *Johannes von Gaza und Paulus Silentiarius*, ed. P. Friedländer (Leipzig, 1912), 263f.; trans. S. Xydis, "The Chancel Barrier, Solea, and Ambo of Hagia Sophia," *ArtB*, 29 (1947), 14-15. In the second part of the metaphor the waves are the crowds of the faithful rather than the matched graining of the pavement. The conceit of the nave floor as a sea, with the matched graining of the pavement recalling waves, becomes a commonplace thereafter; cf. C. Mango and J. Parker, "A Twelfth-Century Description of St. Sophia," *DOP*, 14 (1960), 239.

<sup>2</sup> Διήγησις περὶ τῆς Ἀγίας Σοφίας, in *Scriptores originum constantinopolitanarum*, I, ed. Th. Preger (Leipzig, 1901), 107-8. On the tradition of depicting the sea and the earth on Early Byzantine church pavements, see E. Kitzinger, "Studies on Late Antique and Early Byzantine Floor Mosaics. I. Mosaics at Nikopolis," *DOP*, 6 (1951), 100-8.

<sup>3</sup> [Pseudo-]Codinus, *De S. Sophia*, Bonn ed. (1843), 144-45; cf. Gen. 2:10-14.

<sup>4</sup> Διήγησις, 102-3. Unlike mosaic pavements, the opus sectile floors of Early Byzantine churches have been little studied; but see H. Kier, *Der mittelalterliche Schmuckfussboden unter besondere Berücksichtigung des Rheinlandes*, Die Kunstdenkmäler des Rheinlandes, 14 (Düsseldorf, 1970), esp. 16-52. On later Byzantine church floors, see A. Frolow, "Deux églises byzantines d'après des sermons peu connus de Léon VI le Sage," *EtByz*, 3 (1945), 55-58.

<sup>5</sup> R. L. Van Nice, *St. Sophia in Istanbul: An Architectural Survey, Installment I* (Washington, D. C., 1966) (hereafter Van Nice, *St. Sophia*), pl. 10: Plan at Ground Level, Central Areas; cf. also pl. 1. These transverse bands also appear, of course, in photographs; see T. F. Mathews, *The Byzantine Churches of Istanbul: A Photographic Survey* (University Park, Pa., 1976), no. 31-64 et al. Pavement "rivers" in other churches are occasionally mentioned in literary sources, but usually as borders; see Frolow, *op. cit.*, 56-57.

piers. This river is the least well preserved in the church. Only 3.70 running meters of green marble at the south end of the strip (which is only about 12 percent of the original length) are preserved *in situ*; moreover, this section is a Byzantine patch replacement. The replacement pieces are, however, fitted into matched-grain Byzantine pavement flooring, and the mark of the eastern edge of the strip is quite visible in the preserved Byzantine flooring for a further 66 percent of the distance across the central nave, including the northern 2.70 m., where the line of the western edge of the strip in the matched Byzantine pavement is also preserved. The line is not carried beyond the edge of the last paving sheet within the area of the exedrae.<sup>6</sup>

The second river is 9.10 m. east of the first; its eastern edge is roughly aligned with the eastern side of the western piers. Of its 32.40 m. length, 11.30 m. are Byzantine (4.50 m. in Byzantine patching), and almost all of the remaining line of both edges is clearly visible in the Byzantine pavement.

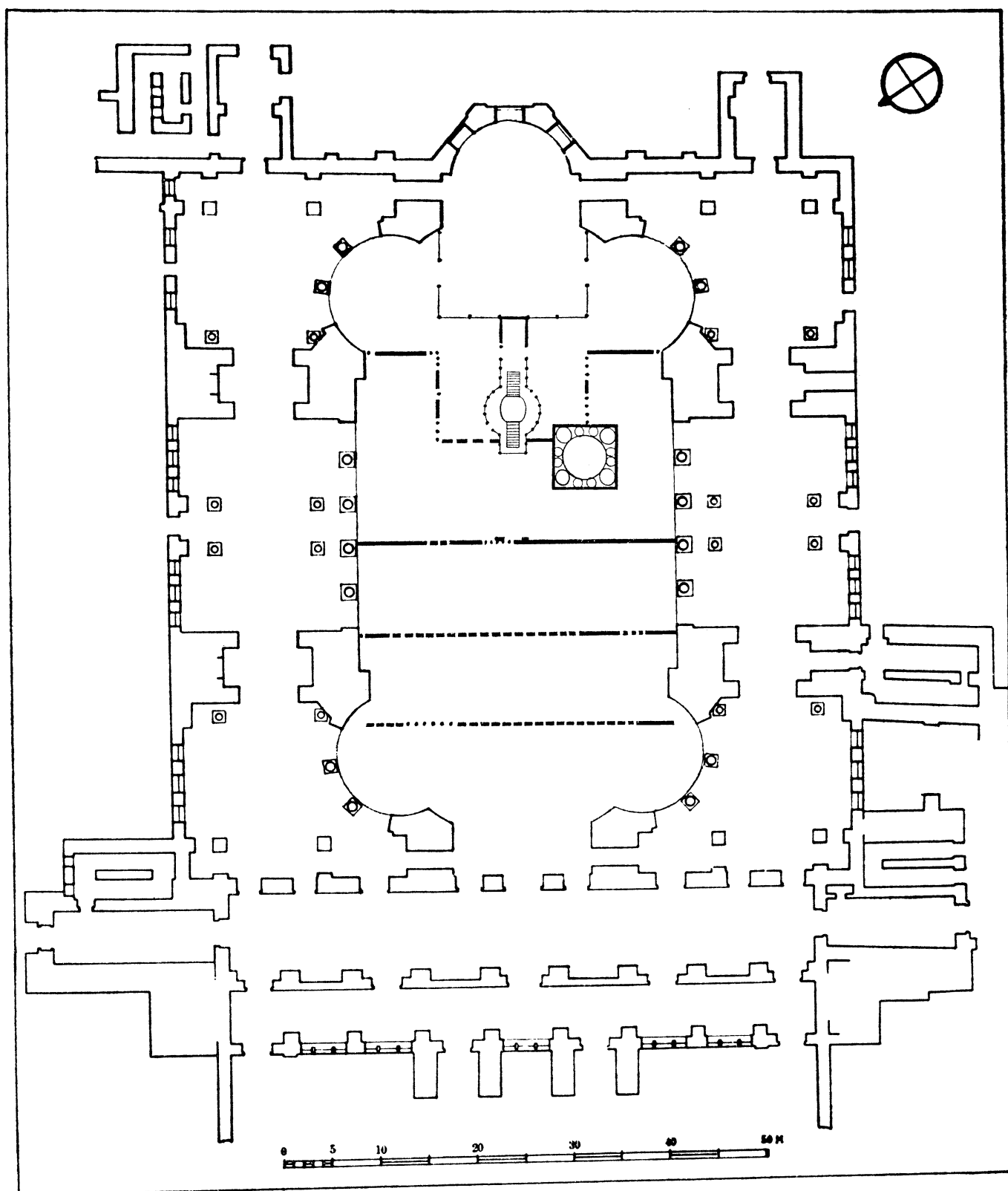
The third river is 8.90 m. east of the second, and is aligned, albeit poorly, on its eastern edge with the eastern side of the bases of the columns second from the west of the aisle colonnades. Only about 13 percent of the strip is missing.

What may be taken to be the fourth of the four rivers on the floor of the Great Church is not as easily described, although, as I trace it, almost 21 percent is preserved. Following the line of this river is difficult, inasmuch as, unlike the other three, it does not cross the nave in a straight transverse line. Because of its peculiar shape, in fact, it is often seen as two separate rivers, giving the church a total of five, although literary sources are clear that there are only four.<sup>7</sup> Tracing the course of this river from the north side of the nave to the south one finds that the meter-size area of very extensive damage to the floor pavement at the east end of the flat south side

of the northeast pier shows evidence of the river line only to within 0.74 m. of the pier. The green marble stripe, badly chipped and damaged, runs south from the damaged area for 5.60 m., though originally the river must have begun at the pier. Lines of a further 0.30 m. of this run are preserved at its south end up to the point where replacement paving cuts off the evidence. I suggest that this line continued a further 0.50 m. before the later pavement was laid, so that the strip had the same length as its opposite member at the south side of the nave (see fig. A and *infra*). This posited extension also served as the eastern terminus of an east-west green marble band now represented by two preserved pieces of green marble. One, 2.20 m. long (with evidence in the surrounding pavement of another 0.33 m. at its eastern end), lies about 3.0 m. west of the north-south strip at the north side of the front of the nave; the other, a strip 1.35 m. long of the same green marble, appears amid smashed plackage just below the level of the present pavement one m. west of the first, and separated from it by an area of replacement paving squares. I suspect that the east-west line represented by these two segments continued 1.10 m. farther west and intersected the continuation of the north-south green band which now abuts the north side of the great opus sectile plaque on the floor of the south side of the nave. This north-south band, I suggest, represents the western segment of the meandering fourth river, the northern and northeastern sections of which have just been described. Its west side is in large part traceable in the line of the Byzantine floor slabs, and the expected green marble is well preserved over a distance of 4.26 m. north from the north side of the opus sectile plaque which it intersects 0.60 m. west of the plaque's eastern edge. The preserved 4.26-m. length running north from the inlay plaque might, indeed, be all that ever existed on the south side of the nave, for the continuation of this line is difficult to trace for the next 2.40 m., after which the probable line of the green strip can again be discerned in its western edge line along the joint of the matched Byzantine pavement. The apparent 2.40 m. break centers exactly on the east-west axis of the church, and quite likely represents the placement of some part of the ambo

<sup>6</sup> The information on physical aspects of the floor is based on Van Nice, *St. Sophia*, pl. 10, and on Mr. Van Nice's field notes and store of information about the Great Church, both of which he has generously shared with me.

<sup>7</sup> See, for instance, Mango and Parker, *op. cit.*, 243; T. F. Mathews, *Early Churches of Constantinople: Architecture and Liturgy* (University Park, Pa., 1971), 97.



A. Constantinople,  
St. Sophia, Ground Plan

—— Green Line Preserved  
 - - - - Line of Strip Preserved in Pavement  
 . . . . . Conjectural Continuation of Strip

complex which we know was in this area (see *infra*). After this break, the line continues north to the point where it would have joined the northern east-west band discussed previously. The east-west green strip which one would expect to connect the comparable western and eastern segments of the fourth river on the south side of the nave is interrupted, of necessity, by the large opus sectile plaque and is visible only in the small archeological trench made in the low, stone Turkish platform which covers the Byzantine flooring near the southeastern major pier. It is, however, aligned, as one would expect from the arrangements on the north side of the nave. The area where the strip should abut the eastern segment of the river is in replacement paving, and thus one can only assume that the two strips once met. The eastern segment in the south part of the nave is preserved almost perfectly for 6.22 m., and the mark of the eastern edge is visible from the preserved section to the nave face of the southeast pier.<sup>8</sup>

#### THE LITURGICAL FUNCTION OF THE RIVERS

At first consideration it would seem difficult to explain what function these rivers served. I would dismiss the explanation suggested in the *Διήγησις* and in Pseudo-Codinus that they were originally designed to represent the

<sup>8</sup> The archeological evidence of the northern east-west sector of the fourth river is, in fact, somewhat more complex. The eastern preserved segment is only 0.40 m. wide, while other river segments in the building are 0.50–0.70 m. wide. This particular segment, however, is a fourteenth-century repair after the most recent collapse of the dome, and the narrowness of the band could easily be accounted for by the fact that its south edge abuts large uniform sheet replacement flooring, the laying of which would have demanded using a conveniently narrower green band here. The western preserved segment of this line (which is a more normal 0.51 m. wide) appears in an archeological trench, and represents an earlier floor (probably the first of the Justinianic church) over which the present floor was laid following the first collapse of the dome. A strong argument can be made in favor of continuity of decoration through the various repairs to the church floor in Byzantine times. The fourth river is traceable in Van Nice, *St. Sophia*, pl. 10; corroborated by Van Nice's field notes.

"four rivers which flowed out of Paradise."<sup>9</sup> These texts are quite late and read symbolism and folklore into almost everything they mention. Symbolic significance commonly comes after the fact. An esthetic explanation, upon which a symbolic interpretation could well have been made, is also not very convincing. The green transverse bands are not symmetrically arranged, despite the statement of Theodore of Andida that they are, nor, one should add, do the spaces between the rivers increase or diminish regularly in either direction to counteract optical foreshortening.<sup>10</sup> The most telling argument against an esthetic explanation of the rivers, however, is that they have no regular relationship to the architectural members of the building. The alternative explanation offered by the *Διήγησις*, that Justinian decreed that worshipers be segregated among the rivers according to their sins,<sup>11</sup> even in conjunction with Symeon of Thessalonica's remark that catechumens and those excluded from communion were allowed to enter the church only part way, would not seem a sufficient explanation for the complex of floor markings.<sup>12</sup> Symeon of Thessalonica, however, does offer specific information on these transverse lines which points to their clearly liturgical function. In describing the rite for the consecration of a bishop, Symeon notes that after the bishops appointed to consecrate their newly elected colleague have taken their places on thrones (located somewhere at the eastern end of the church), the bishop elect enters with his entourage (doubtless through the west doors of the nave) and "... crosses the three rivers marked out on the floor in

<sup>9</sup> See *supra*, notes 3 and 4. Curiously, at least one of the rivers mentioned in the Genesis account of the Garden of Eden is described as winding; see E. A. Speiser, "The Rivers of Paradise," *Festschrift Johannes Friedrich*, ed. R. von Kienle (Heidelberg, 1959), 476–77.

<sup>10</sup> Theodore of Andida, *Commentatio liturgica*, PG, 140, col. 436. The spaces between the bands, from west to east, are 9.10 m., 8.90 m., and 10.88 m. (and 8.50 m. between the western and eastern segments of the last river). See *supra*.

<sup>11</sup> *Διήγησις*, 103.

<sup>12</sup> Symeon of Thessalonica, *De sacro templo*, PG, 155, cols. 357–60; *De divino templo*, *ibid.*, 708; cf. Mathews, *Early Churches of Constantinople*, 120.

chalk, which represent the grace of teaching to which he is called," to approach his consecrators.<sup>13</sup> The symbolism which the Thessalonican liturgist attaches to the rivers need not detain us; symbolic significance varies with the occasion. Indeed, in a marvelously incoherent metaphor, Theodore of Andida would have it that the "strips of dark marble spaced at moderate intervals from each other like ruled lines on the floor of the Great Church are called rivers" because in entering the church [and crossing the rivers?] the bishop represents Christ appearing at the river Jordan.<sup>14</sup> For that matter, the fact that Symeon describes the rivers as *διὰ γύψου ἐκτυπωθέντας* ("marked out in chalk") should not bother us either; he is describing episcopal consecrations in general, which could be held in any church, and few churches had permanent rivers in the pavement as did St. Sophia in Constantinople. In other churches the rivers were apparently supplied temporarily by chalk lines. What is moderately clear in these texts, however, is that the rivers crossed the nave transversely, and, extrapolating from Symeon of Thessalonica's ritual directions, that the fourth river was located beyond the thrones of the consecrating hierarchs whose thrones in St. Sophia would have been near the ambo. (This text, then, seems to confirm our interpretation of the archeological evidence, and suggests that the fourth river marked off an area of the nave restricted to the clergy.) A manuscript typicon preserved at Sinai notes another liturgical use of the rivers on the floor of the Great Church in its recording of special ritual prescriptions for services in St. Sophia on the morning of the Sunday before Christmas, the Sunday of the Holy Fathers. During the singing of the *λιτή* after Orthros, the patriarch advances from the sanctuary "to the third river," where clerics light their

candles from his in preparation for a procession to the Forum of Constantine.<sup>15</sup> This text would seem to refer to the "third river" from the east since the patriarch is going from the sanctuary to the west portal of the church.<sup>16</sup>

At least one clear indication exists that "the rivers" served a liturgical function much more regularly than during the rather special services noted above. Symeon of Thessalonica notes that when the patriarch takes part in solemn vespers in St. Sophia he enters the nave from the narthex through the imperial doors (here *τὰς ὁραίας πύλας*), and when he has advanced "to the first river," he turns to the west to venerate the image of the Savior above the imperial doors on the nave side before continuing eastward to his throne.<sup>17</sup> The text specifies that the same ceremonial is observed when the archbishop officiates at solemn vespers in the church of St. Sophia in Thessalonica, except that in the Thessalonican ritual the archbishop stops to venerate the image over the main doors not "at the first river," as is done in Constantinople, but simply "at the river"; the smaller Thessalonican church apparently had only one.<sup>18</sup> Later in the same work the

<sup>15</sup> A. Dmitrievskij, *Opisanie liturgiĭeskikh rukopisej*, I,1 (Kiev, 1895), 157, no. 286. The ceremony described apparently fell into disuse and is not recorded in other typica. Cf. J. Mateos, *Le Typicon de la Grande Église*, I (= OCA, 165) (Rome, 1962), 134-37.

<sup>16</sup> Dmitrievskij, *loc. cit.*

<sup>17</sup> J. Darrouzès, "Sainte-Sophie de Thessalonique d'après un rituel," *REB*, 34 (1976), 46-49. I have suggested in an earlier article that the image in the nave above the imperial doors of St. Sophia was of the Christ "of the Chalke Gate." See G. Majeska, "The Image of the Chalke Savior in St. Sophia," *Byzantinoslavica*, 32 (1971), 284-95.

<sup>18</sup> Darrouzès, *op. cit.*, 52-53; cf. 46-49. See also commentary, *ibid.*, 68-69. Darrouzès correctly concludes from the wording of this text that the cathedral of St. Sophia in Thessalonica had only one river, and remarks on the unusually long distance between the river at which the clergy turned to venerate the image and the image itself (*ibid.*, 68). The distance in question would be approximately 5.60 m., if one accepts Darrouzès' hypothetical location of the river (*ibid.*, 68-69 and fig. 1). (The present floor is modern, dating from after the fire of 1890, and thus offers no archeological evidence of the earlier pavement pattern.) The icon must have been displayed above the still preserved,

<sup>13</sup> ...[ἐπίσκοπος] ὑποψήφιος τρεῖς ποταμούς διέλθων ἐπ' ἐδάφους διὰ γύψου ἐκτυπωθέντας, τὸ τῆς διδασκαλίας ἐφ' ᾧ ἐκλήθη δηλοῦντας χάρισμα... (*De sacris ordinationibus*, PG, 155, col. 408). The four rivers of paradise represent the four Gospels which the bishop must preach. The same symbolism accounts for the four colored bands on the bishop's cloak which are called "rivers"; see *Euchologion sive rituale Graecorum*, ed. Jacobus Goar (Venice, 1730), 133.

<sup>14</sup> *Commentatio liturgica*, col. 436.

liturgist notes that during the celebration of solemn vespers in the church of St. Sophia in Thessalonica the lectors taking part in the procession with the censer (ἡ εἰσοδος) place their torches "on the river," while the priests venerate the icon over the main west doors of the nave and recite the prayer of the entrance before completing the procession by returning to the sanctuary.<sup>19</sup> The single river on the floor of the church is the counterpart of the first (or western) river in Constantinople's homonymic cathedral; since the services in the Thessalonican church are modeled on those of its Constantinopolitan counterpart,<sup>20</sup> one should assume that in the vesper procession with the censer in the church at Constantinople the procession also stopped at the counterpart river, the green marble strip at the west end of the nave.

From the cases just described we can determine at least one use served by the

continuous Byzantine cornice approximately 7.25 m. above the pavement of the nave. I see no reason to reject the river location posited by Darrouzès, but would suggest that the tradition of venerating the image above the central door from the river is not based on an appropriate distance, but rather is derived from the analogous custom followed in the Great Church at Constantinople (see *infra*), where the distance of the first river from the wall where the icon was displayed was 16.75 m. (see *supra*). However, the image at Constantinople was at least 8.0 m. above the floor (Majeska, *op. cit.*, 293-94; the top of the lintel of the imperial doors above which the image was probably displayed is 8.0 m. above the pavement, according to Van Nice's field notes), demanding that one be at some distance from the image to see it. See Mathews, *The Byzantine Churches of Istanbul* (note 5 *supra*), no. 31-59, a photograph of the area of the west wall of the nave once occupied by the image; the photograph is taken from the first river on the floor of the church. Professor Kleinbauer of Indiana University and Ms. Theodoridou of the Athens Technical University have kindly supplied me with the information on the physical aspects of the church of St. Sophia in Thessalonica used above.

The use of the word ποταμῶν for "river" in this text by Symeon of Thessalonica (Darrouzès, *op. cit.*, 53, 55) is not as unusual in this context as the commentator suggests. It is also used in [Pseudo-]Codinus, *De S. Sophia* (note 3 *supra*), 144, 149, and in the manuscript Typicon, Sinaiticus 286 (Dmitrievskij, *op. cit.*, 157). See *supra*, p. 303.

<sup>19</sup> Darrouzès, *op. cit.*, 54-55.

<sup>20</sup> Cf. *ibid.*, 47, 51.

ivers on the floor of St. Sophia in Constantinople. Like the lines on a stage prepared for ballet, the rivers served as indications of stopping places for the various magnificent processions which played such an important part in the ritual of the imperial cathedral. Infinitely more complex than the rubrics at even a large provincial cathedral, such as the one at Thessalonica which needed only one river, the choreography of the various imperial-patriarchal services in the major church of the Eastern Christian capital demanded four "stop markings" to guide the clergy in their ritual movements.

#### THE POSITION OF THE CHANCEL BARRIER

The peculiar line of the fourth or eastern river would certainly seem to demand some additional explanation. Its unusual configuration suggests that it delineated something; its location at the eastern end of the building immediately suggests that it marked off an area of the church normally restricted to the clergy. The marked off area would include not only the ambo and the bema, but also the area where Paulus Silentarius tells us the choirs sang "enfolded in the arms of the columns," that is, the eastern exedrae.<sup>21</sup> There is also an archeological basis for suggesting a relationship between the line of the fourth river and the line of the bema's projection into the nave.<sup>22</sup>

<sup>21</sup> Paulus Silentarius, "De S. Sophia," ed. Friedländer (note 1 *supra*), 237 lines 374-75; cf. Symeon of Thessalonica, *De sacro templo* (note 12 *supra*), col. 357.

<sup>22</sup> The best and most dependable study of the sanctuary (and ambo) of the church of St. Sophia in Constantinople is Xydis, *op. cit.* (note 1 *supra*), 1-24; see esp. 1-6 on the chancel screen and its configuration. The remaining sections of this paper draw heavily on this excellent work.

More recent studies include E. Weigand, "Die 'Ikonostase' der Justinianischer Sophienkircher in Konstantinopel," *Gymnasium und Wissenschaft (Festschrift des Maximiliansgymnasiums in München)*, ed. A. Schwerd (Munich, 1950), 176-95; V. Lazarev, "Tri fragmenta raspisnyh epistiliev i vizantijskij templon," *VizVrem.*, 27 (1967), 169-72 and *passim*; K. Kreidl-Papadopoulos, "Bemerkungen zum justinianischen Templon der Sophienkircher in Konstantinopel," with appendix by J. Koder, *JÖBG*, 17 (1968), 279-89; C. Walter, "Further Notes on the Deesis," *REB*, 28 (1970), 171-81.

Preserved in the pavement of the northern side of the reduced Byzantine platform which covers the eastern end of the nave is a strip 2.0 m. long of green porphyry stylobate (broken or cut at both ends, and with three square dowel holes) which runs east-west. The strip was uncovered by Dirimtekin in 1955, and clearly represents part of the base of a Byzantine chancel barrier (fig. A).<sup>23</sup> If the line of the stylobate were continued toward the east it would intersect the north-west angle face of the northeast secondary pier, located 5.0 m. away, approximately 1.80 m. from its southern edge.<sup>24</sup> This side of the pier (largely covered by the "Sultan's loge" today) shows marks of serious repair,<sup>25</sup> accounted for in part by the attachments of the loge, but quite possibly also by the removal of Byzantine furniture, perhaps the northeast end of the chancel barrier. The fact that the northern edge of the green porphyry stylobate is rather closely aligned with the southern edge of the northern east-west green strip of the fourth river suggests that this river reflects the lines of the chancel barrier. Since the east-west green marble strip is parallel to and aligned with the probable line of the north side of the chancel barrier indicated by the preserved stylobate fragment, and is approximately 8.40 m. in length, might that also be the length of the north side of the barrier? The dowel-drilled porphyry stylobate segment would, in fact, be included in this length. Assuming such an arrangement, the line of the front or western side of the chancel barrier would fall within a fraction of a meter (0.27 m.) of including a strip of red porphyry 2.40 m. long and 0.28 m. wide, which runs north-south and is imbedded in the pavement of the Byzantine platform exactly on the east-west axis of the church. This strip is part of a Byzantine pattern which includes similar porphyry strips running west at each end of the north-south strip; together they form three sides of a rectangle on the main longitudinal axis of

the church. Filling this open rectangle is a matched pair of Byzantine paving slabs abutting each other on the east-west axis of the building.<sup>26</sup> This pavement pattern, lying on the main axis of the church, with its eastern end close to the projected line of the western side of the chancel barrier, quite likely represents the central opening of the chancel barrier. Unfortunately, no further clear archeological evidence seems to bear on the proposed location of the chancel barrier. The areas where one would expect to find evidence are either late patch replacements or, in the case of the space where one would logically expect to find marks of the south side of the chancel barrier, they are covered by the Turkish mimbar platform.<sup>27</sup> However, note should be taken of an important piece of circumstantial evidence. The placage on the angle face of the southeast minor pier, where the mimbar now stands, and where the east end of the south side of the chancel barrier here posited would have abutted, is an amalgam of repair work in replacement marble and plaster painted to resemble marble,<sup>28</sup> a situation one would expect had an engaged chancel screen been removed from the spot.

The hypothesis suggested above on the basis of the physical evidence can supplement and refine the theoretical restoration of the chancel barrier of the Great Church elucidated by Stephen Xydis from the literary evidence and from comparison with what is known of chancel barriers more or less contemporary with that of St. Sophia.<sup>29</sup> The western side of the chancel screen was approximately 15.70 m. long (cf. Xydis: 14.48–27.36 m., that is, the distance between either the inner or outer sides of the eastern minor piers). The north and south sides of the chancel barrier, of course, were equal, and 8.40 m. long (cf. Xydis: 8.70–11.60 m., based on projected intercolumnia).<sup>30</sup> The combined length of the three sides of the line of the chancel barrier, then, would be 32.50 m.

We know from Paul the Silentiary that

<sup>23</sup> Mr. Van Nice in conversation; Mathews, *Early Churches of Constantinople* (note 7 *supra*), 97. The stylobate fragment appears in Van Nice, *St. Sophia*, pl. 11.

<sup>24</sup> See Van Nice, *St. Sophia*, pl. 11; cf. also pl. 1.

<sup>25</sup> Van Nice field notes.

<sup>26</sup> See Van Nice, *St. Sophia*, pl. 11.

<sup>27</sup> See *ibid.*

<sup>28</sup> Van Nice field notes; cf. H. Kähler, *Die Hagia Sophia* (Berlin, 1967), pl. 82.

<sup>29</sup> Xydis, *op. cit.*, esp. 3–7.

<sup>30</sup> *Ibid.*, 6.

twelve columns formed the chancel barrier, and since it is unlikely that they were arranged in six pairs,<sup>31</sup> one must deal with eleven or thirteen interstices, depending on whether the eastern columns of the two sides of the screen abutted the eastern secondary piers or were freestanding and connected to the minor piers only by an entablature. Given the fact that some of the twelve columns also stood along the sides of the sanctuary, one would expect to find either five or seven intercolumnar spaces on the west side of the screen. The average intercolumniation on the west side would be 3.14 m. if there were five spaces. The intercolumniations on the north and south sides of the chancel barrier must have been similar in size to those of the west side; and, indeed, dividing the 8.40-m. length of each side into three equal segments would result in three 2.80-m. intercolumniations, but slightly less than the 3.14 m. a normal intercolumniation would have on the west side of the screen. It is, moreover, likely that the central portal was larger than a normal intercolumniation, a fact which would necessarily reduce the remaining intercolumnar spaces on the west to a width more in conformity with the size of those on the sides of the barrier. We also know from Paul the Silentiary that the side portals of the chancel screen were smaller than the great portal.<sup>32</sup> This would be so

in the case outlined here even if the lateral entrances were the size of a normal intercolumnar space on the side of the barrier. Such an arrangement would generously accommodate the 2.40-m. north-south crimson strip suggested as marking the threshold of the central portal, with room for the center pair of columns of the west side without their impinging on the special pavement, as archeological testimony would require (fig. B). Accepting Xydis' ratio of intercolumnia to height of column (based on the proportions of the chancel barrier in the fifth- or sixth-century basilica of Afendelli on Lesbos), the columns would be 5.36 m. in height.<sup>33</sup> Columns of this height would locate the pediment of the chancel barrier at approximately the height of a major revetment border which would carry on esthetically the entablature line of the screen. It is noteworthy, moreover, that on the two faces of the eastern minor piers where one could expect evidence of the barrier's attachment, the border is clearly the late repair work one would expect had the chancel barrier entablature been removed when the church was converted into a mosque.<sup>34</sup> The standard diameter for columns of this height would easily support a catwalk at the top for the lamplighter, in conformity with the text of the Silentiary.<sup>35</sup>

<sup>31</sup> *Ibid.*, 3; the case for double columns is presented in J. Walter, "The Origin of the Iconostasis," *Eastern Churches Review*, 3 (1970), 254-55.

<sup>32</sup> Paulus Silentiarius, "De S. Sophia," ed. Friedländer, 247 lines 717-19. Some comment is in order on alternative arrangements of the twelve columns known to make up the chancel barrier of the Great Church. Assuming the west side of the screen had eight columns rather than the six suggested above, the resultant seven intercolumniations would average 2.24 m. in length, which is shorter than the crimson marble strip, and would have demanded column bases on the strip; the good condition of this strip precludes this possibility. Still, as noted earlier, the central portal was probably wider than a normal intercolumnar space; if so, the central pair of column bases could have been located on the surrounding replacement pavement. Such an arrangement would, of course, demand narrowing the remaining intercolumniations still further. With eight columns on the west side, the north and south sides of the chancel screen

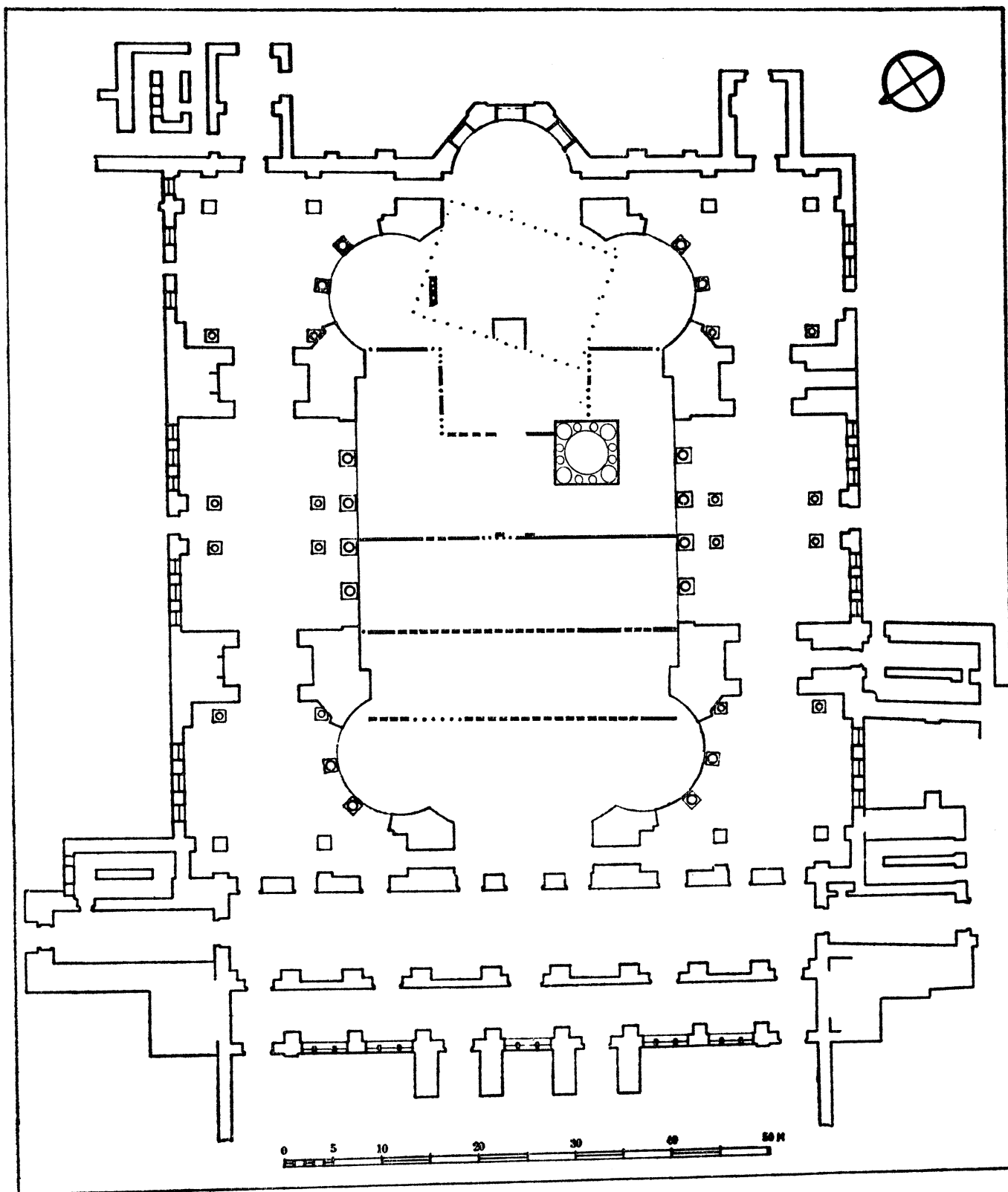
would be left with only two each, plus the corner columns shared with the west side. Even allowing that the chancel screen was freestanding and that between the eastern columns of the two sides and the secondary piers there was a space equal to the two intercolumniations on each side wall of the chancel screen, the spaces between the columns and the columns and minor piers would be 2.80 m., considerably wider than the intercolumnar spaces at the front of the chancel barrier. Moreover, one of these spaces in each side wall would represent a side entrance through the chancel screen, and we are told (Paulus Silentiarius, *loc. cit.*) that the side doors were smaller than the central portal, which would not then be the case.

<sup>33</sup> According to Xydis, *op. cit.*, 6-7. His projection of the 14.48-m.-long west wall of the chancel screen would demand six columns 4.94 m. high; by the same formula the 15.70-m. west wall here posited would have six 5.36-m. column shafts.

<sup>34</sup> Van Nice field notes; Kähler, *loc. cit.*

<sup>35</sup> Paulus Silentiarius, "De S. Sophia," ed. Friedländer, 251 lines 862-65.





B. Constantinople, St. Sophia, Ground Plan.  
The Rivers, Chancel Barrier, Ambo, and Solea

Similarly, archeological evidence in the floors of the church of St. Sophia also aids in locating the ambo-solea complex in the Great Church. Here again, combining Xydis' hypothetical reconstruction with the archeological evidence suggests a more exact placement of this permanent ecclesiastical furniture. Xydis' point that the width of the central opening in the chancel screen might approximate the width of the long narrow solea leading to the ambo is well taken. The rectangular pattern of red marble strips that we have taken as marking the central entrance of the sanctuary is, interestingly, open on the west. In exact alignment with the inset's north and south sides, and thus also on the central axis of the church, is a break in the fourth river 13.20 m. away (see *supra*). The apparently post-Byzantine replacement pavement closely associated with this break in the green marble river strip, and extending 2.60 m. west from it,<sup>36</sup> suggests the removal of permanent ecclesiastical furniture. Since we know from Paul the Silentiary that the ambo (and thus the associated solea, too) stood in the center of the church, but a bit to the east,<sup>37</sup> the repair work in the floor around the center of the

fourth river probably marks the emplacement of the western end of the ambo-solea complex. Its western end would have been approximately 7.0 m. east of the center of the building as marked by the pinnacle of the dome. The width of the solea, which extended west of the ambo to accommodate its western steps, and thus of the solea in general where it did not broaden to accommodate the ambo platform, would be 2.40 m. The solea-pathway, including the ambo, would have stretched, then, 15.80 m. from the chancel barrier (with a break at its eastern end to allow clergy to cross the nave in front of the bema).<sup>38</sup> Figure B adapts Xydis' hypothetical reconstruction of the ambo and solea of the Great Church to the present interpretation of the archeological evidence. Interestingly, an imaginary line continuing the suggested east-west lines of either side of the solea would intersect the centers of two small and unusual rectangular paving blocks of green marble ( $0.6 \times 0.38$  m.) carefully laid in the Byzantine pavement 8.25 m. away, along the east side of the third river.<sup>39</sup> Possibly it was at these markings that processions divided into two lines to move on either side of the ambo and thence, for the lower clergy at least, to the side doors of the chancel barrier.

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<sup>36</sup> Van Nice, *St. Sophia*, pl. 10. E. M. Antonides, "Εκφρασις τῆς Ἀγίας Σοφίας, II (Athens, 1908), 50f., correctly suggested that there was a relationship between the patterns in the pavement of St. Sophia and the location of the ambo.

<sup>37</sup> Paulus Silentiarius, "De S. Sophia," ed. Friedländer, 258 lines 50–51.

<sup>38</sup> See Xydis, *op. cit.*, 23.

<sup>39</sup> Van Nice, *St. Sophia*, pl. 10.